CLAIMS

1. A fuel management system for a working machine (1), comprising:

tank contents amount measurement means (11B) which measures an amount of substance contained in a fuel tank (81) of said working machine (1);

operational value measurement means (11A) which measures a predetermined operational value related to fuel consumption operation of said working machine (1);

remaining fuel amount calculation means (54) which calculates an expected remaining fuel amount, which is an amount of remaining fuel which ought to be present within said fuel tank (81), based on a measurement value from said operational value measurement means (11A);

amount comparison means (55) which compares said amount of contents which has been measured by the tank contents amount measurement means (11B), with said expected remaining fuel amount which has been calculated by said remaining fuel amount calculation means (54); and

alarm issue means (58) which issues an alarm in response to said amount comparison means (55).

2. The fuel management system according to Claim 1, further comprising refueling amount determination means (53, 59) which, when refueling of said fuel tank (81) is actually executed or when scheduled to be executed, obtains an actual or scheduled refueling amount, wherein,

said remaining fuel amount calculation means (54) calculates said expected remaining fuel amount, based on the measurement value from said operational value measurement means (11A), and said refueling amount which has been obtained by said refueling amount determination means (53, 59).

3. The fuel management system according to Claim 1 or Claim 2, wherein

said operational value measurement means (11A) measures operating hours of said working machine (1), and

said remaining fuel amount calculation means (54) calculates a fuel consumption amount of said working machine (1) from said operating hours which have been measured by said operational value measurement means (11A), and calculates said expected remaining fuel amount from said fuel consumption amount which has thus been calculated.

4. The fuel management system according to Claim 1 or Claim 2, wherein

said operational value measurement means calculates or measures a fuel injection amount of an engine of said working machine (1), and

said remaining fuel amount calculation means (54) calculates a fuel consumption amount of said working machine (1) from said fuel injection amount which has been calculated or measured by said operational value measurement means (11A), and calculates said expected remaining fuel amount from said fuel consumption amount which has thus been calculated.

5. The fuel management system according to Claim 1, wherein

the tank contents amount measurement means (11B) measures a volume of said contents in said fuel tank (81), and

said remaining fuel amount calculation means (54) calculates an expected volume of said remaining fuel which ought to be present in said fuel tank (81).

6. The fuel management system according to Claim 5, further comprising:

tank contents weight measurement means (11C) which measures weight of the contents in said fuel tank (81);

remaining fuel weight calculation means (56) for calculating an expected remaining fuel weight, which is weight of the remaining fuel which ought to be present within said fuel tank (81), based on the volume of said contents which has been measured by said tank contents amount measurement means (11B), and on a specific gravity of said fuel; and

weight comparison means (57) which compares the weight of said contents which has been measured by said tank contents weight measurement means (11C), with said expected remaining fuel weight which has been calculated by said remaining fuel weight calculation means (56), wherein

said alarm issue means (58) also issues an alarm in response to said weight comparison means (57).

7. The fuel management system according to Claim 1, wherein

said tank contents amount measurement means measures weight of said contents in said fuel tank (81); and

said remaining fuel amount calculation means calculates expected weight of said remaining fuel which ought to be present in said fuel tank (81).

8. The fuel management system according to Claim 7, further comprising:

tank contents volume measurement means which measures a volume of the contents in said fuel tank (81);

remaining fuel volume calculation means which calculates an expected remaining fuel volume, which is a volume of the remaining fuel which ought to be present within said fuel tank (81), based on the weight of said contents which has been measured by said tank contents amount measurement means, and on a specific gravity of said fuel; and

volume comparison means which compares the volume of said contents which has been measured by said tank content volume measurement means, with said expected remaining fuel volume which has been calculated by said remaining fuel volume calculation means, wherein

said alarm issue means (58) also issues an alarm in response to said volume comparison means.

9. The fuel management system according to Claim 1, wherein, immediately after said working machine (1) starts and immediately after said working machine (1) stops, said tank contents amount measurement means (11B) measures the amount of said contents while said operational value measurement means (11A) measures said operational value.

10. A fuel managing method for a working machine (1), comprising:

a step of measuring an amount of contents in a fuel tank (81) of said working machine (1);

a step of measuring a predetermined operational value related to fuel consumption operation of said working machine (1);

a step of calculating an expected remaining fuel amount, which is an amount of remaining fuel which ought to be present within said fuel tank (81), based on a result of measurement of said operational value;

a step of comparing said amount of the contents which has been measured, with said expected remaining fuel amount which has been calculated; and

a step of issuing an alarm in response to said comparison result.